

# BACK CARE

Our backs are made up of a remarkable combination of strong bones, flexible ligaments and tendons, large muscles and highly sensitive nerves. Designed to be incredibly strong, the spine protects the highly sensitive nerve roots yet remains highly flexible, providing for mobility on many different planes. Most of us take this combination of strength, structure and flexibility for granted in our everyday lives until something goes wrong. Once we have back pain, we're driven to know what's wrong and what it will take to relieve the pain and prevent a recurrence.

# STRUCTURES OF THE BACK

The back is a complex structure that provides support for your pelvis, legs, ribcage, arms and skull. The spine is made up of bones called vertebrae that are stacked together to form a loose 'S'-shaped column. Each vertebra is cushioned by spongy tissue or cartilage called intervertebral discs. These discs act as shock absorbers and give the spine its flexibility. They have a flat structure with a jelly-like center. Vertebrae are joined by pairs of small joints known as 'facet' joints. A mesh of connective tissue called ligaments holds the spine together. Complex layers of muscle provide structural support and allow movement. The spinal cord runs through the center of the vertebral stack and connects the brain to the rest of the body. The lower back has a lot more motion than the thoracic spine and also carries all the weight of the torso, making it the most frequently injured area of the spine.



# THE IMPORTANCE OF GOOD POSTURE

Good posture is the position in which our muscles work with minimal effort, while maintaining the natural shape of the spine. This places the spine in its most efficient and powerful position. Even when we sit well, the compressive forces through our lumbar spine are greater than when standing. If we slouch, these forces are doubled again. This can lead to short-term discomfort and contributes significantly to long term degeneration of our joints. Slouching also forces our neck into a forward-head posture, which causes discomfort in the neck and shoulder muscles, and can cause headaches.

# IMPROVING AND MAINTAINING YOUR POSTURE

Even if you sit well, remember to stand and stretch regularly. One minute of stretching every thirty minutes is usually better than one thirty-minute stretch per day.

- Adjust any chairs you use regularly (office chair, car etc) so you can maintain proper posture when sitting. This also applies to sitting on the lounge or at the kitchen table.
- Exercise regularly to improve muscle strength and tone.
- Our abdominal muscles support the lower back so make sure they are in good condition (e.g. perform regular abdominal strengthening exercises).



- Avoid standing on one foot for extended periods of time.
- Cross your legs at the ankle not the knee.
- Avoid sitting in soft, squashy chairs.
- Use lumbar rolls or back support cushions when sitting for long periods or driving the car.
- Make sure you have a supportive mattress.

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For Good Posture, Remember:



Research has shown that the most important abdominal muscles for providing spinal stability are your deep abdominal muscles. These muscles form a 'corset-like' band around your lower trunk. They are activated with and support good posture. When we do sit-ups and trunk curls, we strengthen the superficial muscles. These muscles do not have the endurance required to assist our posture for a whole day. To activate your deep abdominal muscles, start with good upright posture. Maintain normal breathing and draw your belly button gently towards your spine. You can exercise your deep abdominal muscles sitting at your desk or in your car or standing in the queue at the supermarket. Exercise programs using Pilates principles or gym balls often focus on core stability. Even just sitting with good posture strengthens our deep abdominals! See the handout for specific exercises.



### FLEXIBILITY AND EXERCISE

Our bodies are designed to be active! When we lead a sedentary lifestyle, we do not regularly use our muscles, so our muscles become smaller and weaker. This is particularly true for the muscles that protect our back. If our abdominals and lower back muscles are weak, we are at much greater risk of injuring our back or having lower back pain from our day-to-day activities. General exercise such as walking, running, swimming, team sports, bike riding and so on all make the body's stabilizing muscles contract and work, which keeps them in good condition. Exercise also helps us to maintain a healthy overall body weight and a healthy waist measurement. The more fat around the abdominal area the greater the stress on the spine.

# COMMON CAUSES OF BACK PAIN

• **Soft tissue injuries:** If your back is out of condition or if you have pre-existing problems, you are more vulnerable to soft tissue injuries such as sprains and strains. Excessive force and repetitive use may also damage muscles.

- Arthritis: Osteoarthritis and ankylosing spondylitis are two forms of arthritis linked to back pain.
- **Osteoporosis:** This disease is characterised by loss of bone density and strength. The vertebrae can become so porous and brittle that they break easily and thus cause pain.
- Sciatica: Sciatica develops when the nerve that runs from the lower back into the leg is compressed by a bulging intervertebral disc, causing pain.
- **Stress:** One of the side effects of stress is increased muscle tension. This can lead to fatigue, stiffness and localised pain. Constantly tight muscles can create imbalances in a person's posture that may cause misalignment of the spine.
- **Structural problems:** Lifelong bad posture, osteoporosis and genetic conditions (such scoliosis or kyphosis) cause pain by putting added stress on the structures of the spinal column.

# TOP 10 TIPS FOR A HEALTH BACK

- 1. Exercise and stretch your back regularly.
- 2. Always bend your knees and hips, not your back.
- 3. Learn to lift heavy objects using the correct lifting technique.
- 4. Avoid over-the-shoulder sling bags, and carry larger loads in a comfortable bag using both shoulder straps.
- 5. Maintain a good sitting and standing posture avoid slumping in your chair, hunching over a desk, or walking with your shoulders hunched.
- 6. Try to take a short break from sitting every 30 minutes.
- 7. Quit smoking it's thought that smoking reduces the blood supply to the discs between the vertebrae, and this may lead to disc degeneration.
- 8. Lose any excess weight, as this can put extra pressure on your discs and postural muscles.
- 9. Check that your bed provides the correct support and comfort for your weight and build, not just firmness.
- 10. Learn relaxation techniques to help manage stress, as stress is a major cause of muscle tension and back pain.

#### LIFESTYLE FACTORS CONTRIBUTING TO BACK PAIN:

Most cases of back pain are exacerbated by lifestyle factors including:

- Lack of exercise
- Being overweight or obese
- Sitting for long periods
- Poor posture
- Stress
- Bad work practices

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